

IN THE CLAIMS:

Claims 1-18) (canceled)

Claim 19) (new) An artificial heart for insertion in a living being comprising:
a right blood chamber and a left blood chamber, said right and left blood chambers having an inlet port and an outlet port, wherein
said right blood chamber is characterized by having a right outlet port for directly attaching to the main pulmonary artery, and wherein
said left blood chamber is characterized by having a left outlet port for directly attaching to the aorta artery.

Claim 20) (new) An artificial heart for insertion in a living being comprising:
a right blood chamber and a left blood chamber, said right and left blood chambers having an inlet port and an outlet port, wherein
said right blood chamber has a right outlet port characterized by not including any valve, said right outlet port for being adjacent to the valve of the main pulmonary artery, and wherein
said left blood chamber has a left outlet port characterized by not including any valve, said left outlet port for being adjacent to the valve of the aorta artery.

Claim 21) (new) An orthotopic total artificial heart for insertion in a living being, said orthotopic total artificial heart being an integrated one-piece system comprising:
a right blood chamber and a left blood chamber, said right and left blood chambers having an inlet port and an outlet port,
a compressing mechanism and a power source,
said orthotopic total artificial heart characterized in that said compressing mechanism has means for simultaneously squeezing and directing blood into and out of both said blood chambers.

Claim 22) (new) An orthotopic total artificial heart as defined in claim 21, wherein said compressing mechanism comprises:

an outer compressing chamber enclosing both said blood chambers, said outer compressing chamber having one or more moving surfaces,

a compressing fluid filling the space enclosed between said outer compressing chamber and said blood chambers.

said compressing fluid transmitting the forces from said moving surfaces of said compressing chamber to effect the expansion and contraction of said blood chambers.

Claim 23) (new) An orthotopic total artificial heart as defined in claim 21, wherein said compressing mechanism comprises:

an outer compressing chamber enclosing both said blood chambers, said outer compressing chamber undergoing a low volume change in response to changes in internal pressure,

a compressing fluid filling the space enclosed between said outer compressing chamber and said blood chambers,

means for connecting said outer compressing chamber to a source of additional compressing fluid, said compressing fluid effecting the expansion and contraction of said blood chambers, said expansion and contraction being effected by withdrawing and introducing said compressing fluid from and into said outer compressing chamber respectively.

Claim 24) (new) An orthotopic total artificial heart as defined in claim 21, wherein said compressing mechanism comprises:

at least two moving surfaces, said moving surfaces performing direct compressing action on both said right and left blood chambers to effect the expansion and contraction of said blood chambers.

Claim 25) (new) An artificial heart for insertion in a living being comprising:
a right blood chamber and a left blood chamber, said both blood chambers having multiple-walls,
said both blood chambers having variable discharging blood volumes, wherein
said variable discharging blood volumes of both blood chambers is achieved by the addition of a fluid into the interstitial space between the walls of said multiple-walled blood chambers.

Claim 26) (new) An artificial heart for insertion in a living being comprising:
a right blood chamber and a left blood chamber, said both blood chambers having an inlet port and an outlet port,
a compressing mechanism, and
means for varying the discharging blood volume of both blood chambers, wherein
the variation in the discharging blood volume of both blood chambers is performed by the variation in the displacement of said compressing mechanism, combined with the right blood chamber lower blood volume ejection for being ejected under a lower circuit pressure, and combined with the left blood chamber higher blood volume ejection for being ejected under a higher circuit pressure.

Claim 27) (new) An orthotopic total artificial heart for insertion in a living being, said orthotopic total artificial heart being an integrated one-piece system comprising:
a right blood chamber and a left blood chamber, said right and left blood chambers having an inlet port and an outlet port,
said orthotopic total artificial heart characterized by two compressing mechanisms and at least one power source, each said compressing mechanism having means for independently squeezing and directing blood into and out of each said right and left blood chambers respectively.

Claim 28) (new) An orthotopic total artificial heart as defined in claim 27, wherein said compressing mechanisms comprise:

two outer compressing chambers, each said outer compressing chamber enclosing said right blood chamber and said left blood chamber respectively,

said outer compressing chambers each having one or more moving surfaces,

a compressing fluid filling the space enclosed between said outer compressing chambers and said blood chambers,

said compressing fluid transmitting the forces from at least one of said moving surfaces of said compressing chambers to effect the expansion and contraction of each said blood chamber.

Claim 29) (new) An orthotopic total artificial heart as defined in claim 27, wherein said compressing mechanisms comprise:

two outer compressing chambers, each said outer compressing chamber enclosing said right blood chamber and said left blood chamber respectively,

said outer compressing chambers undergoing a low volume change in response to changes in internal pressure,

a compressing fluid filling the space enclosed between said outer compressing chambers and said blood chambers,

means for connecting each said outer compressing chamber to a source of additional compressing fluid, said compressing fluid effecting the expansion and contraction of said blood chambers, said expansion and contraction being effected by withdrawing and introducing said compressing fluid from and into said outer compressing chambers respectively.